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## SPECIAL ARTICLES

### AN INDUSTRIAL SCHOOL FOR EPILEPTICS AND FEEBLEMINDED

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### DIPHTHERIA MORTALITY

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# The Public Health Journal

VOL. XIV.

TORONTO, OCTOBER, 1923

No. 10

## An Industrial School for Epileptics and Feeble-minded

By ARTHUR J. MORPHY, M.D.

*Demonstrator in Psychiatry, McGill University; Assistant in Neuro-Psychiatry, Royal Victoria Hospital, Montreal.*

IN February, 1920, a division of the work in the Neurological Outdoor Department of the Royal Victoria Hospital, Montreal, led to the writer having the epileptics assigned to him, twelve or fifteen in number. They were of various ages, naturally, and their afflictions of varying nature and intensity. Their mentality varied much, likewise their intelligence, ranging from the epileptic imbecile up to the supernormal with intelligence clouded by recent attacks.

But, apart from their attacks and peculiarities, the great outstanding feature as applied to all, except the very young, was idleness. One man, it is true, an Englishman with a hemiparesis and general as well as Jacksonian attacks, was fortunate enough to have his attacks only at night, while during the day he continued his occupation.

But the disheartening feature was the idleness and hopelessness of the growing boys and young men who could not go to school nor to work. And at that time there was nothing for it but to hand them out more bromides and watch them become more and more dulled from its use, so that one wondered which was the worse—the disease or the remedy.

Just about that time, however, we were able to get a supply of luminal, and the patients brightened up wonderfully and had fewer attacks. But the idleness problem remained. The implorings and upbraidings of the mother of one boy, a lanky lad of eighteen, drove the writer to the verge of distraction. "Sure, doctor, all the boy does is to lie on the kitchen floor and throw fits when he isn't looking at photo-play magazines. Sure I don't know what to do with him at all, at all."

The idea of an industrial school, conceived, matured and born within a few minutes, proved fruitful. Friends came forward with sympathy, help and money, and within two months the Montreal Industrial Institute for Epileptics and Feeble-minded was founded and incorporated, and a

small class of four boys and two girls actually started to work under a trained industrial worker.

The work has gone right along since then, the attendance gradually increasing from four to twelve. The equipment, which at first consisted only of reed to make baskets, now includes four hand looms of large size, on which rugs and curtains may be woven, a book-binding equipment, a large supply of reed, various tools, including a set for wood-carving, work benches, tables and chairs.

Basket-work is a staple handicraft by which a new pupil may learn to use his hands and to execute certain designs, in addition to making saleable articles. We could not very well do without it. Rug-weaving is more promising as regards material results. A well-woven rug is something a pupil may well be proud of, a useful and ornamental article which should last a long time, a staple article for which there is continual demand. Besides, a certain amount of interest attaches to the loom itself, and the necessary attention to it is good mental training. Machine work is, in the pupil's estimation, a distinct advance from pure hand work, and he bangs away at his loom with great satisfaction.

Book-binding was tried as an experiment, with comparatively poor results. The work is complicated, requiring precision and care, the very qualities lacking in deteriorated and feeble-minded pupils, and the finished work does not bulk as large or striking to the eye as a rug, for instance. All the careful sewing together of the leaves is hidden under the binding on the back of the book. The finished product may be pleasing to the eye, but it is attained at the cost of greater skill and patience than the average pupil of this kind possesses or is even capable of attaining.

So this work has been given up, temporarily, at least.

Wood-carving appeals to some pupils, and occasionally one discovers unexpected visual memory and even visual imagination. In the case of Harry, for instance, aged 20 years, mentality of low grade, intelligence quotient 46, subject to major epileptic seizures since infancy, has never gone to school on account of seizures, has learned to read short words, and has developed an astounding faculty for multiplication. Ask him how much is  $13 \times 24$ , for instance, and he gives correct answer within two seconds. So also with  $18 \times 18$ ,  $17 \times 17$ ,  $99 \times 16$ , and so on. Asked how he had accomplished this, he stated that he was always interested in hearing his sisters working at their arithmetical exercises at home, and that he had personally worked out a system in which he used 10 as a basis of calculation.

Under luminal therapy and diet regulation, Harry's attacks have diminished so much in number that sometimes three or four months pass without an attack, a condition of affairs unknown in his previous history.



He became very enthusiastic over wood-carving at the school, and executed some very creditable pieces of work under the teacher's supervision, and, more important still, he designed and carved out a beautiful piece of work during the summer, without supervision. His life is now happy, since he knows and feels that people outside of his own family, who are not always tolerant of his deficiencies and peculiarities of disposition, take an interest in him and are trying to make something of him. His outlook has brightened. He has an interest in something far removed from the monotony of a life spent at home helping his mother. He would not miss his one day a week at the school for anything.

His unusual calculating ability and his skill in wood-carving are striking points in the general scheme of a low-grade mind.

Other interesting cases could be cited, such as that of Stanley, a congenital luetic, with hemi-paresis, contracture of arm, subject to epileptic seizures, who learend to use the paretic hand making baskets and carving wood. He improved so much that he was able to take a position running an elevator.

But space prevents our citing other cases. We can only state that six boys have left the school and gone to work, one lad is practically self-supporting through doing work at home. He has very few seizures now, but his mentality is low and peculiarities of disposition somewhat marked, so that he is unfitted for regular employment. Another, when last heard of, had gone to work on a farm. One has gone to work for an undertaker and gives vivid and picturesque descriptions of his work.

Our general plan is to teach the pupils how to work, to develop their intellectual powers as far as possible by varied occupational work and by academic instruction, to try to inculcate ideas of the benefit of continuous work, its discipline and habit-forming power; to overcome their physical disabilities as far as possible, for instance, in urging on a boy with semi-paralysed hand; to create an interest in work for its own sake, apart from the monetary reward; in brief to convert these comparatively hopeless, useless human beings into happy and useful people.

But our work among epileptics and feeble-minded who are suitable for the industrial school is only part of a large problem. The growth of the special clinic for epileptics from twelve or fifteen cases in 1920 to about seventy-five cases at present brings us into touch with a problem of national importance. There is no more hopeless, helpless, pitiable case than that of the confirmed male adult pauper epileptic, subject to severe seizures, and generally deteriorated mentally, but not sufficiently to be classified as insane. There is no place for him. Not being insane, he cannot be sent to an asylum. No hospital nor institution in this Province at least will receive him. Nobody wants him. Nobody can or will employ

him. He is an outcast. He has no means of self-support. He is even dangerous. Crimes of violence have been committed in the dream states of epilepsy.

An instance of the problem presented by a severe case of epilepsy is the following: J. G., ex-British soldier, had served in the Boer and Matabele wars. Came to Canada twelve years ago. Worked on farms in various places, west and east. Began to have epileptic fits ten years ago. Found it more and more difficult to remain any considerable time in any place. Discharged on account of attacks. At last, he could not find employment. "Nobody will 'ave me," he said. The Salvation Army sent him up to the clinic. The refuge where he had been lodging turned him out. The police took him in, and kindly allowed him to sleep in a cell every night for three months. When the warm weather came, they turned him out. He sat up all night in a park. Next day he came to the Clinic, and our Social Service took him in hand. After several hours of work, the Social Service prevailed upon the Refuge to re-admit him. Meals had to be provided for. Money was procured from charitable organizations to provide for meals for six months. The man spends his days at the Salvation Army and nights at the Refuge. He is willing and anxious to work. Last week a farmer near Montreal was induced to take him on board wages. After three days he discharged him, as he had had a severe attack. So J. G. is back on our hands again. This is an extreme case and there are others, but we need not multiply instances.

One more, however, may be cited. A. B., a Russian Jew, aged 52, has been subject to major attacks for about twelve years. For the past nine years he has been supported by the Jewish Charity Federation, being given eight dollars per week. He is a powerfully built man, accustomed to hard labour. His blood and spinal fluid are negative to Wasserman test. His urine and blood pressure are normal. He complains of continual headache. There are no nerve paralyses, and the ocular fundi are normal. Luminal and bromides have very little effect. He has a seizure every day. Cerebral neoplasm has been suspected for years past, but no positive evidence found.

He is not fitted for hard labour, but would be better if doing light work. He is unsuitable for the school on account of his severe attacks. The total cost of this patient to the Jewish Federation during the past nine years is nearly four thousand dollars. Under suitable conditions, he could have earned at least enough to provide his food.

The ideal place for patients such as the two above described is a farm colony for epileptics.

The Quebec Government have the project under consideration, we are informed, and we who are in touch with the epileptic problem hope that the project may soon be carried into effect.

## Is the Nationalization of the Medical Profession Desirable?

By J. HEURNER MULLIN, M.D., Hamilton\*

*(Continued from last issue).*

Many of the public and some of the Medical Profession often presume that the introduction of a new cult indicates a supposed deficiency in the methods of regular medicine of the day. Too often the cult indicates the neglect to use procedures which, in less dramatic form, are available for use by our Profession. Medicine, like other sciences, will be always subject to change with the introduction of new knowledge, but only so rapidly as this new knowledge may be proven to be reasonably accurate and valuable. When the cult, taking advantage of this commendable delay, and in handling a limited field of practice may apparently show results, the public should look for more information before it accepts the cult as a complete new system applicable to all manner of disease. Medicine in the past has benefitted by the introduction of new information by its members, either those in practice, or pure scientists, and will surely in the future absorb procedures, even those being glorified by the present day cults, as soon as these can be shown to be of definite and proven value. It is certainly up to the public themselves to see that through their legislators, they get protection from the incompetent, whether he be one of our own body or one of the many irregular groups. We should not claim the right to dictate in such matters but surely with the experience which has come to us through years of study puts us in a position where we may be permitted to advise.

There can be no doubt that the medical profession will have to assume the responsibility of cleaning house before the public will pay very much attention to their advice regarding any change in the present system. There will have to be some method devised which will eliminate from our ranks and protect decent society from that high grade criminal who merely employs his medical knowledge for graft and imposture. Although suspicions may be comparatively well founded this will likely be found a difficult task. Members of regularly constituted Medical Societies must, in the interest of the public, be given some greater protection against legal action for libel or slander when they investigate charges, even of those of a less serious import.

There should be provided some "reporting-house" system from which the public can get accurate information regarding the qualifications and ability and integrity of our members. There should be some method, possibly periodical examinations indicating that these members are keeping up to date. I do not believe that it is going too far to say that at the present time, the public runs greater risk in trusting themselves to certain of our members who refuse to attend Society meetings and otherwise keep themselves informed, than they may even take in going to the irregular and out and out quack.

The public should be informed regarding conditions which, in recent years, keep members of our regular Societies abreast of the times. Those who sell Medical Books tell us that in the last fifteen or twenty years there has been a tremendous change on the part of the profession generally throughout this country to buy and read the newer Medical Works. There is certainly no dearth of material presented. As in ordinary life, with facilities of transportation and other measures, we find it much easier to interchange our knowledge and experience in personal contact. A larger percentage of our members are continuously taking refresher courses at leading teaching centres and in addition to this we have been able, during the past few years, to introduce into Ontario a programme of Post Graduate education which has not been equalled in any part of the English-speaking world. Under this plan teachers from our three Provincial Universities are being sent to many of our local and county Societies. We know this alone has played a tremendous part in increasing their own activities in the interest of Scientific Medicine.

The public in Hamilton are not fully aware of the excellent work which is being done by our local Society. There are few places of similar size in the American Continent that can equal our record. In recent years we have been able to persuade many experts from the leading cities on the Continent to come over and help us. You should certainly be told that during the past year more than sixty addresses were given by guests in addition to work presented by our local members.

In no Society will you find members more friendly in their daily work, nor more free from antagonistic cliques. Our record as indicated by the work conducted in the Babies' Dispensary plainly shows that many of our members are willing to recognize their duty in this form of communal work. More than twenty-five per cent. of our medical population have already shown their interest

by working without pay as members of that clinic staff, while in no other city in America can it be shown that ten per cent. of the medical population in the like manner has been actively interested. With some encouragement from the public, and officials, this percentage can be very materially increased, and the principle applied to other forms of desirable communal work.

It should be pointed out that our various public clinics, no matter how thoroughly they have been organized, have one decided weakness which the system can never overcome. The doctor in attendance at these clinics knows nothing whatsoever of the actual conditions of the home of the patient, nothing of the environment, physical and mental and little regarding their possible financial capacities. The social worker or visiting nurse endeavours to replace this deficiency with certain written information, but the frequent changing of these nurses or workers in the life of the patient, only emphasizes these limitations.

We should strive for an ideal in the future, which will instead of having a few paid officials with the assistance of others on part-pay, have an ideal which will include an organization of our profession for service up to one hundred per cent. of our membership. We are merely touching on the fringe of preventive medicine. The golden age to many appears to be so far away as to be outside the realm of practical politics but this is, on close examination, not the case. We must admit that a start has already been made and that much has been accomplished.

Undoubtedly the major share of the work of the practitioner in the future will consist of activities on the preventive side for which he will be well paid. Supervision of the expectant mother, the care of her normal infant, supervision during school life and later periodic routine examination for all adults will become a recognized procedure for all in dealing with their own doctor.

In the case of those who can well afford to pay for it, this procedure in a few cases is being adopted to-day and should be encouraged in every possible way by informing the public concerning the advantages to be gained. Should it be possible to correct our economic system in such a way as to give every worker a decent living wage, he also would then be able to buy this service in the same manner in which he would pay for his ordinary medical attention, making his selection according to his individual preference as he now buys his groceries and his clothes. If we could modify housing conditions and give him decent accommodation at a normal rent sufficient for a reasonable amount of recreation, the oppor-



tunity of putting something away for his old age, he would be relieved of many anxieties that now add to his infirmities. Until this utopian age comes about I feel confident that the medical profession can and will be of the greatest assistance in the readaptation to our present day requirements, providing they are given a reasonable share in the management of the same.

In an attempt to remedy the failures in the present Medical Health Insurance Act in England, the British Ministry of Health appointed a special committee to investigate the whole problem of Medical Service including Hospitalization of the sick public. In May, 1919, the committee submitted an interim report which is worth while considering in detail.

This report recognized the following principles:—

(1) Measures for dealing with health and disease become, with increasing knowledge, more complex, and therefore, less within the power of the individual to provide, but rather require combined efforts.

(2) As complexity and cost of treatment increase, the number of people who can afford to pay for a full range of service diminishes.

(3) Preventive and curative medicine cannot be separated on any sound principle, and in any scheme of medical services, they must be brought together in close co-ordination. They must likewise be both brought within the sphere of the general practitioner, whose duties should embrace the work of a communal as well as individual medicine.

(4) That the home does not always offer the best hygienic conditions.

(5) That it is impossible in cases requiring elaborate study to get along without complete X-ray and Laboratory facilities.

(6) That in order to get the best results, the combined efforts of public health administration should be under one organization and centralized in the same institution.

(7) Any scheme for the co-ordination of medical services must be available for the benefit of all classes in the community.

(8) The services may be classified—(1A) Domiciliary, (1B) Institutional, (2A) Individual, (2B) Communal.

(9) Services should include those of the doctor, nurse, dentist, pharmacist, and should include provision for X-ray and other Laboratory facilities, and an Ambulance service.

They would therefore name this Institution the Health Centre, containing all of these various departments, both preventive and curative in one Organization. These Health Centres would be divided into two types—(A) The Primary, denoting more simple, (B) The Secondary, the more specialized service.

**Primary Health Centre:** Round this would be grouped all the services of preventive and curative that would use this as a base. Both the Institutional and the Domiciliary service would be conducted by the general practitioner of the district, with the aid of a nursing service and visiting consultants who would be sent in

from the Secondary Centre. The Health Centres would be located mostly in Town or Village and the patients would retain the services of their own doctor.

**Secondary Health Centre:** These would be manned by efficient half-time consultants and more elaborate diagnostic equipment. The patients would be entirely under the control of the consulting staff. These would of course be located in the larger cities.

The consultants from the Secondary Centres would make periodic visits to the Primary centre and would be on call in case of emergency.

If on the visits of a consultant to a Primary Centre it was discovered that the case required the study of more than one member of the consulting staff or in the case of operations, more qualified surgeons, the patient would be moved to the Secondary Centre.

During their stay in such Secondary Centre every encouragement would be given to the attending physician, from the Primary, to pay more or less frequent visits in order to watch the progress of the case and in order to be in better position to follow up the treatment on their return home.

In the Primary Centre, in addition to wards, operating room, X-ray and laboratory rooms, dispensary, baths and equipment for massage, electric and other forms of physical therapeutics, there would be a common room which would serve as a meeting place for the general practitioner of the district; a place for preserving clinical records. By frequent meetings, study of cases and interchange of knowledge aided by the periodic visits from the consulting staff, the medical profession of the district would be kept abreast of the times.

In addition to this it is suggested that each of these Secondary Centres in the whole district should be closely linked up with one of the established so-called teaching hospitals or medical schools. To such schools the medical men of the whole district could pay more or less frequent visits for refresher courses or on the other hand the staff of such schools should be available for going to these Primary Centres and assisting in a Post-Graduate education.

The alternative of a whole-time salaried service for all doctors has received their careful consideration, and they are of opinion that by its adoption the public would be serious losers.

"No doubt laboratory workers and medical administrators who do not come in personal contact with the sick man would, with advantage, be paid entirely by salary.

The clinical worker, however, requires knowledge not only of the disease, but of the patient; his work is more individual, and



if he is to win the confidence so vital to the treatment of illness, there must be a basis not only of sound knowledge but of personal harmony. The voluntary character of the association between doctor and patient stimulates in the former the desire to excel both in skill and helpfulness. It is a true instinct which demands "free choice of doctor," and there should be every effort, wherever possible, to make this choice a reality. In no calling is there such a gap between perfunctory routine and the best endeavour, and the latter, in our opinion, would not be obtained under a whole-time State salaried service which would tend, by its machinery, to discourage initiative, to diminish the sense of responsibility, and to encourage mediocrity."

In addition to the Secondary Centre in any district, there would be created specialized hospitals such as those for Tuberculosis, Epilepsy, and the Feeble-minded. Orthopedic Recuperative Centres and Homes for the Incurables. Such as these would be created as the occasion demanded.

In our country little attention has yet been paid to the question of hospitalization of our sick public, except in a few of the larger centres. In the Western Provinces they have greater progress than we have in the East. But even there, large numbers of the population are still far removed from adequate hospital facilities.

Our Post-Graduate programme in Ontario has started some men thinking. Acting in co-operation with the officers of the Ontario Division of the Red Cross we now have a committee which has under way a complete study of the facilities now available and our requirements.

Should it be possible to imitate the proposed British plan, and acting either independently or connected up with Provincial Health Departments, dot the Provincial Map with small community hospitals with X-ray and Laboratory facilities, there can be no question that the type of service provided would be vastly improved for the great rural community who produce the bulk of our wealth.

Great care will be necessary in providing for the administration of these local units, to leave provision for local control to prevent the abuses of a centrally organized and autocratic secretariat. Machinery must be provided which will easily remove the incompetent or the bombastic irrelevant orator who is little better than the mere political heeler who considers his job safe for life. In the great United States too many of such officials in their various activities are disgusting to the fair-minded Britisher who has been brought up imbued with fundamental principles of individual rights. Too long in office their arrogance increases as their efficiency withers. Soon it is too evident that their obvious activities are merely connected with the anxieties of salary increases.

This Province has several excellent men in Public Health work. Under their administration this work has advanced far beyond the stage when the Irish policeman methods were in vogue, but we have no guarantee that their successors will always be of the same high standard. To be truly successful these officials, nominally in charge, must understand the fundamental principles of organization and in a generous spirit of co-operation must make use of every available group who with or without definite scientific training, can assist in the development of the ideals possible in any community.

Our larger hospitals are specially organized departments of public service. Some would place a lay-man in charge of these and emphasize the essentials of business economy in administration. But hospital service is more than this. The ramificating features in hospital affairs, which require a medical viewpoint are now so evident that we definitely recognize the necessity for developing medical men as experts in this field. The medical superintendent who is beyond fear or favor or possible consultant fees is absolutely essential in supplying to the lay board and through them to the public at large, reliable information regarding the observation of the requirements of those scientific standards which are now considered essential.

Lay-boards of such hospitals have not fulfilled their whole duty unless they are in a position to continually give guarantees to the public which will inspire their complete confidence in the work conducted therein.

Probably the great Flu epidemic, more than anything in the history of our time, more definitely brought home to medical profession of this city and the public, the necessity and absolute duty of the community to provide adequate health organization. During the progress of this epidemic, our local medical Society appointed a special committee to assist the members of the Board of Health in dealing with the situation. In spite of the adverse criticisms of a few the committee had reason to believe that the great bulk of our citizens heartily supported the measures taken and as a whole the results justified the means adopted.

This committee in submitting the final report of the year to our Society recommended that in order to prevent a repetition of such an outbreak, that the City, after an exhaustive study, should adopt means which would best guard the well being of its citizens. It considered that the only satisfactory method to make any such study would be to have a complete survey of all conditions.

This survey should include the study of the necessity for increased hospital accommodation and connected therewith, increased Laboratory facilities. It should cover all the problems of general sanitation, housing, parks, and playgrounds, tuberculosis, venereal disease, child welfare, school inspection, district nursing, poor relief, care of the aged and incurable, and a complete system of social service in so far as it affects any of these departments.

It had previously been brought out in a discussion earlier in the year that we were not entirely satisfied with health administration in this city. It must be equally evident to-day that a complete survey would reveal conditions which are unsatisfactory; that with many different agencies interested in various phases of these problems, on the one hand there may be unnecessary overlapping or that desirable activities are entirely overlooked and in other ways there is a sad lack of co-ordination.

Let any citizen who doubts the necessity for such a survey, quietly sit down and paper in hand estimate the cost of health service in our City of to-day. This estimate should include the gross amount paid out of public funds and in addition to this the amount which is paid by individual citizens. The former would include the amount paid for the maintenance of our public health department, the hospitals, school inspection, tuberculosis and all of the semi-medical charities. The later would include fees paid to the doctors, money spent on drugs, and nursing service. To the former we might stretch the point and add funds for maintaining our parks and playgrounds and all forms of amateur athletics. We might even add the cost of commercialized sport. To the latter we might also include loss of wages through illness and money lost to the community during the period of convalescence when men are returned to work at a lower standard of efficiency. Some would go even further and include money spent for relief dependent on illness and similarly other factors less closely connected with the health problem, such as the cost of crime and sanitation.

I have discussed the matter with friends who have had a wide knowledge in municipal and community affairs and I am assured by those who ought to know that the sum total would run anywhere from three to five millions. Is it possible in any business which has an annual spending budget that this huge amount would exist without the periodic examination and careful audit of their affairs or a regular department of cost accounting, and redistribution of funds in the interests of efficiency of management and organization for the real object in view.

In Cleveland such a survey was made two years ago and already at this early date they realize that the value received has many times repaid them for the actual cost.

I am convinced that if such a survey were undertaken by a competent investigator he could show very positive reasons both for the sake of efficiency and economy, in favor of the centralization of all our activities under one single Health Commission. Such a Commission need not entirely usurp the activities and duties of independent public boards or voluntary agencies now present in the field and under whose wise and efficient direction their various activities are conducted. It would merely act as a Board of Control for all. With a definite proportion of the tax rate at their disposal, they could distribute funds available.

In order to be more efficient than our present system, this Commission should be more of a permanent character than our present "City-fathers." They might easily be selected or elected in rotation, serving for a definite period of years according to the number on the Board.

As an essential feature of such a Commission there should be an appointed chief, a Medical man of the highest professional standing, one who would continually command the respect of the medical profession and the public at large.

In addition to the Health Commission there might be created an Advisory Health Council much larger in size, including therein two or more representatives from each of the various Boards covered by the plan. The more or less frequent meetings of such a council, in formal or informal session, would add much to the efficiency of each branch of work. Each group would more thoroughly understand the other's activities and could undertake effective means to prevent overlapping of any semblance of incordination.

As Goldwater says, things can be done in the city of 100,000 which are impossible in the Metropolis or in a very small community. We have many public-spirited citizens and social, business and other organizations interested in the welfare of this Community who could be easily enlisted to bring these things about. Surely our citizens deserve the best service that it is possible to provide.

Let us again refer to these early War promises. No one can refuse to admit that things are topsy turvy in the world to-day, if not close to actual financial chaos. Do not many of the monied class exhibit the same arrogance. Are not often the men in financial control, though ignorant of true economics, as despotic as ever

in the big business activities? Are there not many tilts in the tournament of life to-day more cruel and far-reaching than those of spear and armour in early medieval days? If those who would criticize the occasional member of our profession whose ideals are tinged with interests in commercial advantages, I would ask, why should they expect this human of to-day to rise out of the social environments of his time?

And so the world struggle goes on. The future must decide whether before the end we will see capital and labour on opposite sides in a bitter and bloody revolution, or that the sky-pilots may persuade us to accept, in place of the present system of self-interested commercial rivalry, some revision of our standard of ethics whereby we may learn to carry on according to the highest ideals of morality in our relations to our fellowmen.

In Hoover's recent essay on American Individualism, he comments on the ability of any social system to evolve within itself in order to apply new tools of social, economic and intellectual progress, in a sane and orderly maner. Quoting from this essay we find:—

"There is developing in our people a new valuation of individuals and of groups and of nations. It is a rising vision of service. Indeed, if I were to select the social force that above all others has advanced sharply during the past years of suffering, it is of that service—service to those with whom we come in contact, service to the nation, and service to the world itself. If we examine the great mystical forces of the past seven years, we find this great spiritual force poured out by our people as never before in the history of the world—the ideal of service."

No doubt many in this audience have noticed the tremendous influence for good in such organizations as the Rotary, Kiwanians, Kinsmen, Gyro, and the Lions. Possibly when all the members of these organizations actually practice the principles which they preach and when they reach out and teach these principles to other members of the community, it may be possible even in our day and generation to expand our sense of loyalty to our own immediate families, so that it will include all mankind.

The question of method of service to the sick is not merely a medical but also an economic or social problem. Any attempt at its permanent revision must go hand in hand with the readjustment of the elements in our social fabric, and not merely a plan enslaving one group in a Nationalization scheme. There has never yet been such a scheme tried out in practice or publicly discussed which gives to the individual a reasonable amount of liberty or the best service which it should be possible to provide.

The plan to be worked out must recognize that each individual in society has communal as well as personal obligations. Any discussion of his right and privileges must discover the due proportion which each of these obligations bear to one another. No plan can be arbitrarily presented at the present time, but should be gradually evolved. It is to be hoped that all of us will be able to rightly interpret the basic ethical requirements, in our efforts, to develop some plan in the near immediate future.

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The portions of the above paper in smaller type consist of reviews and quotations from the various sources indicated and are presented without comment or endorsement.

\*As a member of the Committee on Interrelations of the Ontario Medical Association, I am under obligation to state, before saying anything dealing with this subject, that I personally assume responsibility for statements made and that in no sense do I present any official communication from this organization.

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## Diphtheria Mortality

RUGGLES GEORGE, B.A., M.D.

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*(Continued from last issue)*

This hospital receives most of the diphtheria cases among the 600,000 inhabitants of Copenhagen. During this period, serum treatment was always applied on a large scale, the serum being usually injected intramuscularly. Since 1916, the doses administered have been constantly increased until severe cases in 1921 were given 200,000 units. Experience showed that the larger the dose of antitoxin, the better the results. The details are shown in the following table:—

TABLE VIII.

CASE FATALITY FROM DIPHTHERIA —(FAUCIAL CASES ONLY)—  
BLEGDAMSHOSPITAL, COPENHAGEN, 1916-1921.

Year	Cases	Deaths	Deaths per 100 cases
1916	657	10	1.5
1917	869	23	2.6
1918	968	14	1.4
1919	1,497	23	1.5
1920	1,977	17	0.86
1921	1,821	15	0.82

The foregoing indicates a tremendous improvement in the treatment of diphtheria following the introduction of antitoxin. Of this improvement there is no doubt but the rate of reduction has not been maintained during recent years. A good illustration of this slow progress in diphtheria control during recent years is given by a study of the fatality rates from diphtheria in Chicago from 1912 to 1919, which show that, while there is a slight fluctuation from year to year, there has been no appreciable decrease in the case fatality, the fatality rate of 11.31 per cent. for the four years, 1916 to 1919, being almost the same as for the preceding four years, when it was 11.63 per cent. From a study of 147 fatal cases observed in the Durand Hospital, Chicago, during the period 1913-1920, Weaver has come to the conclusion that the high death rate is partly due to neglect by the parents and partly to inefficient professional care which includes (a) failure to cultivate sore throats, (b) failure to give antitoxin at once without waiting for



the result of the culture, or in the presence of a single negative culture, (c) failure to follow patients with a sore throat after seeing them once, (d) insufficient doses of antitoxin, (e) failure to get the antitoxin quickly in contact with the circulating toxin owing to the employment of subcutaneous injections instead of the intramuscular or intravenous method and (f) confusing diphtheria with other conditions such as mumps or quinsy.

The case fatalities here noted are chiefly those of hospitals, because it is only in hospitals that accurate records are kept of the relation between cases and deaths. An attempt to calculate a case fatality rate for an entire community is always foiled by the incomplete notification of cases. Deaths from diphtheria are reported in larger proportion than the cases which gives a case fatality rate higher than actually happens.

#### CASE RATES.

Case rates give no evidence of decline as is shown by the following diagram (Fig. 9). At first glance one might be led to suppose that the incidence of the disease was shown by the case rate. To a certain extent this is true but the case rate is based on the number of cases notified and notifications are never complete. The basis of notification is diagnosis and there is almost certainly a progressive increase in the proportion of correct diagnoses made, owing to increased laboratory facilities for diagnosis and the increasing appreciation of the diphtheritic nature of many cases that formerly would have been considered simple sore throat.

The reasonable conclusion seems to be that the incidence of diphtheritic disease is not on the decline. We probably have as much diphtheria to-day as occurred a generation ago. Why the diminished mortality but no decrease in the prevalence? Antitoxin must be given the credit for the reduction in mortality. Antitoxin relieves the symptoms of the disease and the patient recovers. The mortality statistics of antitoxin and pre-antitoxin periods prove this beyond a doubt. (See Fig. 5.) But the antitoxin itself has no direct effect upon the number or the virulence of the diphtheria bacilli in the throat or nose of the patient. Virulent diphtheria bacilli may persist for over a year in the noses and throats of patients who have recovered completely from the clinical signs of the disease. Virulent diphtheria bacilli may also be found in the throats and noses of those who have never shown signs of the disease. To these human carriers must be attributed the continued prevalence of diphtheritic disease. Antitoxin does not touch the

## CASES OF DIPHTHERIA, 1908-1920

Vertical Scale:—one inch equals 250 cases per 100,000 population

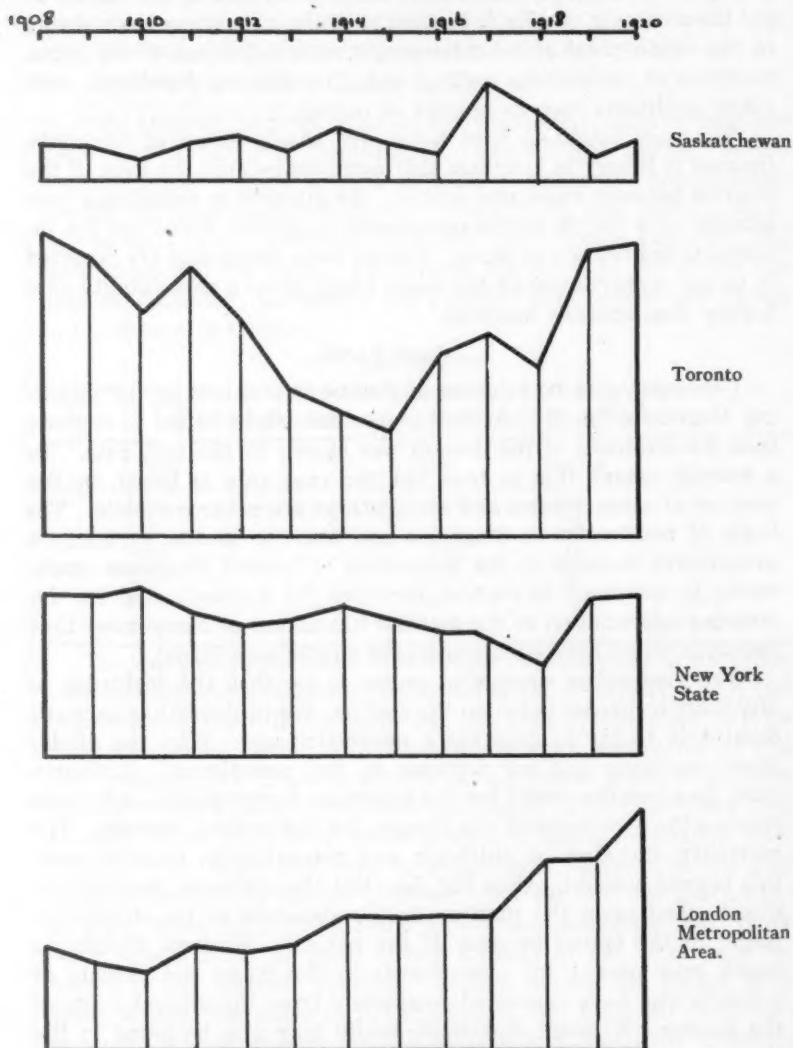


Fig. 9.

carrier and the continued prevalence of diphtheria should not be cited as an example of the failure of antitoxin. Antitoxin cures the disease but the elimination of carriers is not antitoxin's job. No effective means are known to eliminate the carrier, at least no effective means that may be generally applied. Isolation of detected carriers and either time or tonsillectomy may render them harmless but the missed case and the carrier-at-large will continue to sow the seeds. The extended use of toxin-antitoxin should reduce the number of susceptible children and the control of the patient remains the first line of defence, but the question—"Is dip. doomed?" must still be answered in the negative.

#### SEASONAL PREVALENCE.

Diphtheria is present during the whole year but most of the cases and deaths occur during the colder months, as is shown in Table IX. and Fig. 10. In Toronto the cases are least numerous from May to August. With September the diphtheria season opens and the cases increase rapidly to a peak in December followed by a decline during the late winter and early spring.

The record of New York City during 1920 shows December to be the peak month for cases followed by a peak for deaths in February.

The records of the London Metropolitan Asylums Board give quite a different curve. From January to August there is a distinctly low level, followed by a moderate rise from September to November and a very sharp peak in December. This December peak is confirmed by a study of the records of the Metropolitan Asylums Board during the 33 years from 1889 to 1921. In these years the number of diphtheria patients in the Board's hospitals attained the maximum in the following months:—

November	in 12 years	August	in 2 years
December	in 12 years	February	in 2 years
October	in 4 years	July	in 1 year

A peak month apart from mid-winter is explained by the fact that an epidemic, once started, tends to run its course irrespective of season.

The seasonal incidence of diphtheria is probably due to a combination of several factors. During the autumn children are more indoors, they are congregated in schools and are more subject to all infections of the nose and throat.

TABLE IX.

## SEASONAL PREVALENCE OF DIPHTHERIA AND CROUP.

Month.	M. A. B. Hospitals Toronto, Canada, 1889-1918. London, England, 1907-1921.				New York City, 1920.			
	Cases	Per cent.	Cases	Per cent.	Cases	Per cent.	Deaths	Per cent.
January,	2,243	10.56	11,700	8.13	1,492	10.5	136	13.0
February,	1,733	8.15	10,500	7.30	1,229	8.6	149	14.3
March,	1,670	7.86	10,950	7.61	1,364	9.6	136	13.0
April,	1,388	6.53	9,200	6.39	1,345	9.5	113	10.8
May,	1,353	6.37	9,200	6.39	1,308	9.2	81	7.8
June,	1,573	7.40	9,100	6.32	1,246	8.8	79	7.6
July,	1,322	6.22	9,350	6.50	817	5.8	41	3.9
August,	1,273	5.99	7,900	5.49	522	3.7	35	3.3
Septem'r.,	1,614	7.59	11,450	7.95	522	3.7	29	2.8
October,	2,141	10.07	13,950	9.69	934	6.6	44	4.2
November,	2,437	11.47	13,850	9.62	1,535	10.8	86	8.2
December,	2,500	11.77	26,750	18.59	1,852	13.1	116	11.1
Total,	21,247	100.0	143,900	99.98	14,166	99.9	1,045	100.0

## RURAL AND URBAN INCIDENCE.

How does the city compare with the rural district?

Dwellers in congested districts suffer repeated exposures to the diphtheria bacillus. These exposures either cause actual clinical diphtheria or may produce mild infections of the mucous membranes which are not recognized as diphtheritic, but which may lead to the gradual development of antitoxic immunity.

A greater proportion of city youths than country youths show immunity to diphtheria. Schick tests were made on 333 young men between the ages of 17 and 21 years on the first day of their attendance at a military training camp. These young men were drawn almost equally from city and rural homes. The results of the Schick tests are shown in Table X.

## MONTHLY INCIDENCE OF DIPHTHERIA CASES

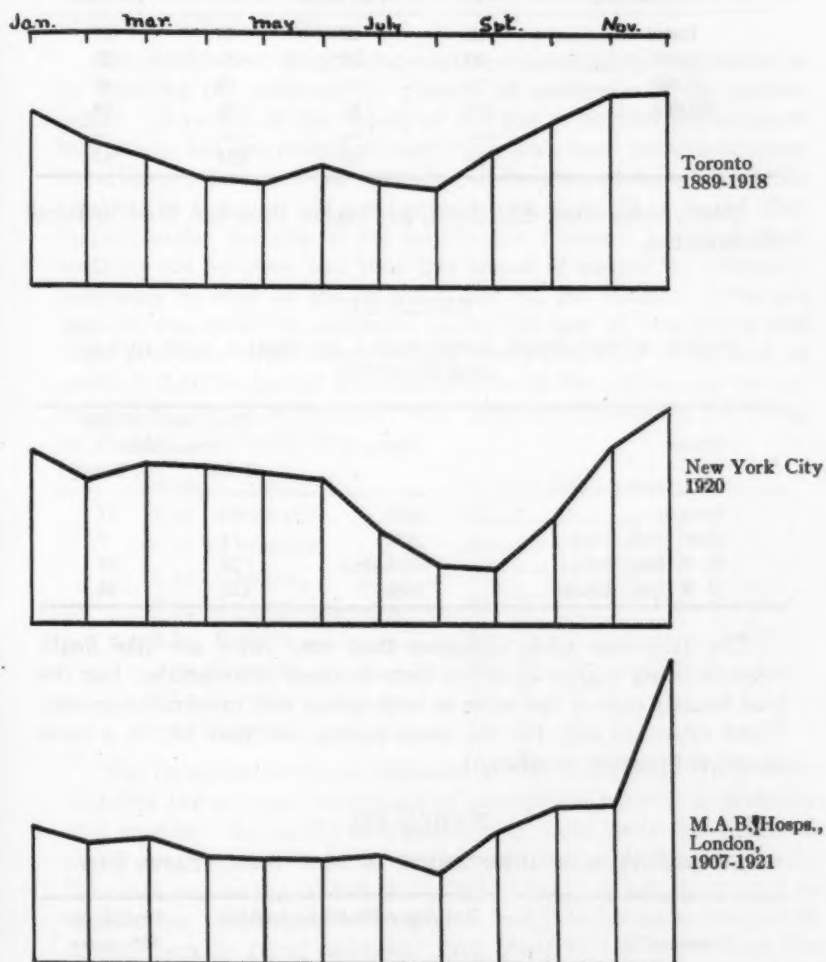


Fig. 10.

TABLE X.

Community	Susceptible		Immune	
	No.	Per cent.	No.	Per cent.
Rural _____	121	62	73	38
2,500 _____	92	52	85	48
10,000 _____	74	54	62	46
100,000 _____	107	51	104	49
	394	55	324	45

Death rates from diphtheria are higher in urban than in rural communities.

TABLE XI.

DEATH RATES FROM DIPHTHERIA IN URBAN AND RURAL COMMUNITIES.

Place.	Period	Ratio per 100,000 population.	
		Urban	Rural
Ontario _____	1919	24	11
New York State _____	1922	14	9
U. S. Reg. Area _____	1910-1914	22	15
U. S. Reg. States _____	1890	122	55

The following table indicates that case rates are like death rates in being higher in urban than in rural communities, but the case fatality rate is the same in both urban and rural communities. These rates are only for one state during one year but in a state where notification is efficient.

TABLE XII.

DISTRIBUTION OF DIPHTHERIA IN NEW YORK STATE, 1922.

Community	Ratio per 100,00 population		Deaths per 100 cases
	Cases	Deaths	
Urban _____	212	14	6.8
Rural _____	134	9	6.8
Total _____	176	12	6.8

## AGE AND SEX

The incidence of both morbidity and mortality from diphtheria varies greatly at different ages and varies directly with the susceptibility at different ages.

The Schick test determines relative susceptibility to diphtheria by showing the presence or absence of antitoxin in the person tested. A recital of the details of the test is beyond the scope of this thesis, but the results of many thousand tests confirm common experience concerning susceptibility to diphtheria, especially in its relation to the ages of greatest susceptibility. It is found that infants under the age of six months are immune, provided their mothers are immune, and that this period of congenital immunity continues as long as the infant is fed on the breast. From six months susceptibility increases up to the age of two years and then gradually diminishes, though the diminution is at first so gradual that the period from six months to five years may be considered the period of greatest risk. This is illustrated by the study of Park in New York City.

Under 3 months .....	15 per cent. susceptible
3 to 6 months .....	30 " " "
6 to 12 months .....	60 " " "
1 to 2 years .....	70 " " "
2 to 3 years .....	60 " " "
3 to 5 years .....	40 " " "
5 to 10 years .....	30 " " "
10 to 20 years .....	20 " " "
Over 20 years .....	15 " " "

The foregoing refers to residents of New York City. In country districts the average percentage of susceptible persons is probably still greater. Immunity to diphtheria is most likely the result of small and repeated doses of virulent diphtheria bacilli, always sub-infective or causing infection so slight that it is not recognized as diphtheria. Such doses of bacilli are bound to be more common in towns than in rural districts. This leads to the belief that the proportion of susceptible persons in the whole population is in excess of that indicated in the foregoing table.

The age incidence of cases corresponds in a general way to the susceptibility at different ages as shown by the Schick test. Table XIII. shows the age distribution of 5,644 cases admitted in 1921 to



the hospitals of the Metropolitan Asylums Board, London. Less than 2 per cent. of the cases were in infants. Thirty-one per cent. of the cases occurred in children under the age of 5 years and the first nine years of life included over 70 per cent. of the cases.

TABLE XIII.

DIPHTHERIA CASES BY AGE AND SEX, HOSPITALS OF METROPOLITAN ASYLUMS BOARD, LONDON, 1921.

Age	Male	Female	Total	Percentage of total cases
Under 1 year	136	101	237	1.91
1 year	451	397	848	6.82
2 years	376	378	754	6.06
3 years	453	451	904	7.27
4 years	565	554	1,119	9.00
Total under 5	1,981	1,881	3,862	31.06
5-9 years	2,275	2,619	4,894	39.37
Total under 10	4,256	4,500	8,756	70.43
10-14 years	880	1,217	2,097	16.87
15-19 years	240	398	638	5.13
20 and over	268	673	941	7.57
Total	5,644	6,788	12,432	100.00

Table XIV. gives the age incidence of cases in Toronto during 1922. This is similar to Table XIII. except for the higher morbidity rates under the age of one year and over fourteen years. As many cases occurred in persons over fourteen years as under five years.

TABLE XIV.

DIPHTHERIA CASES BY AGE, TORONTO, 1922.

Age	Percentage of total cases
Under 1 year	4
Under 5 years	29
5-9 years	41
10-14 years	11
15 and over	29

The same problem may be studied in a little different way in the following table which shows the number of deaths from diph-

theria at different ages and for the sexes in Ontario during 1921. The highest mortality occurs in the second year, with a regular decline to the fifth year and a sharp decline from 5 to 9 years. Over the age of 14 years, the mortality is insignificant.

TABLE XV.

DEATHS FROM DIPHTHERIA AND CROUP BY AGE AND SEX,  
ONTARIO, 1921.

Age at Death	Male	Female	Persons	Per cent.
Under 1 year	21	12	33	5.06
1 year	23	23	46	7.06
2 years	40	29	69	10.58
3 years	26	38	64	9.82
4 years	37	26	63	9.66
Total under 5	147	128	275	42.18
5-9 years	120	130	250	38.34
10-14 years	37	46	83	12.73
15-19 years	7	3	10	1.53
20 and over	11	23	34	5.21
Totals	322	330	652	99.99

The following diagram (Fig. 11) shows the percentage of total mortality due to diphtheria in the different age groups. This diagram shows that nearly sixteen per cent. of the total mortality due to diphtheria occurs in children from five to nine years. Comparison with Tables XIII. and XIV. shows that the percentage mortality at different ages corresponds with the age incidence of the cases.

PERCENTAGE OF TOTAL MORTALITY DUE TO DIPHTHERIA AND  
CROUP PER 100 DEATHS FROM ALL CAUSES, UNITED  
STATES REGISTRATION AREA, 1910-1914.

Under 1 year	0.6%	
1-4 years	10.2%	
5-9 years	15.95%	
10-14 years	2.7%	
20 and over	0.1%	

Fig. 11.

Deaths from diphtheria occur chiefly among children under the age of five years. Two factors combine to produce this result. In the first place, natural immunity to diphtheria is more rare during

the early years of life. In the second place, diphtheria tends to involve the larynx and windpipe in young children. The percentage of all diphtheria deaths occurring in children under the age of five years in different localities is as follows:—

TABLE XVI.

Locality	Period	Percentage of Deaths from Diphtheria under 5 years
U. S. Reg. Area _____	1919	56 per cent.
Ontario _____	1921	42 per cent.
Toronto _____	1900-1922	54 per cent.
New York State (exclusive of New York City) _____	1919	55 per cent.
New South Wales _____	1914	64 per cent.

In view of the above, it is a little difficult to understand the statement of so reliable an authority as Abraham Zingher, who writing in "The Journal of the American Medical Association" states:—"From 80 to 85 per cent. of all cases of diphtheria and of all deaths from the disease occur in children under the age of 5 years."\*

The heaviest mortality seems to be between the ages of 12 and 24 months. This is shown by Table XVII. which also illustrates the regular decline in mortality from the third to the fifth years and a rapid decline thereafter. In this table it is interesting to contrast the higher case fatality among London infants from 1894 to 1896 as compared with infants in the United States from 1900 to 1910.

The foregoing shows that the period from six months to five years is the danger period from diphtheria. This is especially true of the period from 12 months to 4 years. During this period a child stands the greatest chance of being susceptible to the disease, of actually contracting the disease, and, having done so, of dying therefrom.

The groups of children to whom toxin-antitoxin has been administered, have been of school age. This was a necessary beginning as a new method may be introduced most easily amongst school children. Much the better way would be to give toxin-antitoxin during the latter half of the first year. At this age many infants are under the supervision of a physician or child hygiene clinic, the

\* J. A. M. A., Vol. 80, Page 456.

TABLE XVII.

## CASE FATALITY ACCORDING AGE—PERCENTAGE DISTRIBUTION OF DEATHS FROM DIPHTHERIA IN

(A) - London Metropolitan Asylums Board Hospitals, 1894-1896.

(B) United States Registration Area, 1910-1914.

Age at Death	Deaths per 100 Cases	
	A	B
Under one year _____	41.1	7.9
One year _____	47.7	16.0
Two years _____	31.6	14.9
Three years _____	26.5	12.9
Four years _____	27.9	10.5
Total under 5 years _____	31.6	62.2
5-9 years _____	20.4	25.8
10-14 years _____	12.3	6.0
15-19 years _____	13.3	1.9
20 years and over _____	4.5	4.1

Schick test is almost superfluous and the reaction to toxin-antitoxin mild. When a baby is weaned, the mother frequently loses close touch with the doctor and the clinic.

The distribution of diphtheria between the two sexes shows very little of interest. Tables XIII. and XV. show little difference between the sexes either in cases or deaths. Girls over fourteen do show an excess over males. Possibly, girls of this age are more exposed to infection through contact with infants and runabouts among whom most of the cases occur. In the total mortality at all ages there is no important difference between the sexes.

The death rate from diphtheria has been compared by Raymond Pearl with that of the combined death rate from four causes of death upon which no direct attempt at control has been made. The study was made for the Registration Area of the United States from 1900 to 1918, as illustrated in Fig. 12. The rates are plotted on a logarithmic scale, as this method of plotting makes the slope trend of one line directly comparable with that of the other, irrespective of the absolute magnitude of the rates concerned. The four causes of death upon which no direct attempt at control has been made are acute and chronic bronchitis, paralysis without specified cause, purulent infection and septicemia, and softening of the brain. Fig. 12 shows that the death rate from the non-controlled causes has decreased in about the same proportion as that from diphtheria.

At first glance, this diagram might lead to the belief that public health efforts were without value. I do not think this is the lesson of the chart. The lesson seems to be rather that a declining death TREND OF COMBINED DEATH RATE FOR FOUR NON-CONTROLLED CAUSES OF DEATH AS COMPARED WITH DEATH RATE FOR DIPHTHERIA.

United States Registration Area, 1900-1918.

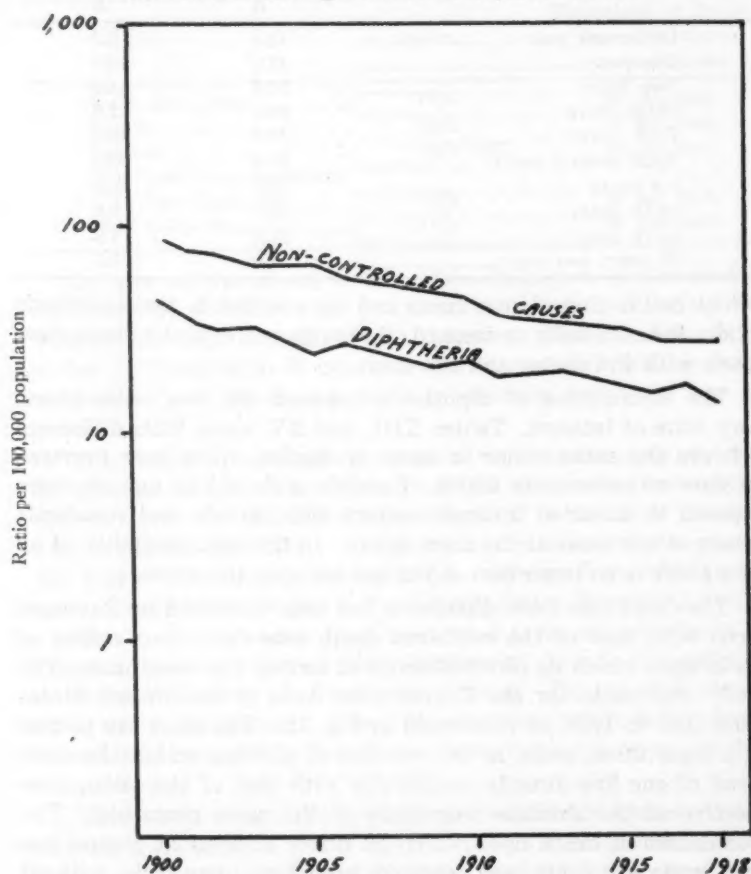


Fig. 12.

rate in any disease or group of diseases should be considered to be the result of many factors. Further, public health effort does result in a reduction in the death rate from these so-called "non-

controlled" diseases. For instance, the control of tuberculosis undoubtedly reduces deaths from bronchitis and anti-venereal work reduces deaths from paralysis and septicemia. The "four uncontrolled causes" are said by Professor Pearl to have been selected at random. If he had taken pains to select the most unsatisfactory statements of cause of death he could not have made a better selection. These terms are undesirable and misleading.

#### CONCLUSION.

The history of diphtheria is partly comforting, partly disquieting. The deadly outbreaks of the years before the advent of antitoxin have been replaced by a fatality rate only one-fourth of that which formerly prevailed. On the other hand, the disease is more prevalent than ever, though the death rate is reduced; and during recent years the death rate has tended to rise again. The death rate declined most sharply in the years immediately following the introduction of antitoxin. The decline in case fatality has been greatest during recent years.

The age of greatest danger from diphtheria is from six months to five years. During this period a child has the greatest chance of being susceptible to diphtheria, of actually catching the disease and, having caught it, of dying therefrom. From 42 to 64 per cent. of deaths from diphtheria occur in children under the age of five years. At different ages, the highest death rate and the highest case fatality are found between the ages of 12 and 24 months.

The sexes show only a slight difference. Both morbidity and mortality predominate slightly in boys under the age of 2 years and in girls over the age of 10 years.

Diphtheria is present during the whole year, but most of the cases and most of the deaths occur during the cold months. However, an epidemic, once started, runs its course irrespective of season.

The city dweller is more likely to be immune to diphtheria than the country dweller. The case rate and the death rate is higher in urban than in rural communities.

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# The Kahn Precipitation Test in a Public Health Laboratory

BY H. K. DETWEILER, M.D. (Tor.)

**E**XPERIENCE in the Clinical Laboratories of the University of Toronto, Department of Medicine, with the Kahn precipitation test for syphilis<sup>1</sup> led me to believe that this procedure might be of value in connection with the routine Wassermann tests carried out in a public health laboratory. Accordingly, we endeavoured, whenever practicable, to make a Kahn test on every serum submitted for the complement-fixation test for syphilis at the Provincial Board of Health Laboratories, Spadina House.

The main incentive to investigate the possibilities of such a test lies in the inherent difficult and time-consuming technique of the Wassermann test. Most of the efforts to overcome this handicap have been directed along one or two lines; firstly, attempts to modify and simplify the established test; secondly, attempts to utilize the well-known flocculation or precipitation phenomenon which occurs as a colloidal reaction in connection with certain sera.

The earliest precipitation test was known as the Fornet ring test, which employed the serum of a frankly parietic patient as the antigen. This was layered in a tube along with the suspected serum and in positive cases a reaction was supposed to occur, not unlike the appearance of a positive nitric acid ring test for albumin in urine.

The next method to be advocated was that Klausner, in which the suspected serum was diluted with distilled water, and allowed to stand at room temperature for from 7 to 15 hours. A flocculent precipitate at the bottom of the tube indicated a positive result. Porges-Meier modified this procedure by adding 1% sodium glycocholate to the mixture, thereby rendering the reaction more delicate.

Following this the Herman-Perutz test was put forward. It consisted, essentially, in adding to the serum to be tested, equal parts of an aqueous solution of sodium glycocholate, and an alcoholic solution of the same chemical to which cholesterol had been added.

In all the foregoing procedures, a vital fault existed in that they

<sup>1</sup>The Kahn Precipitation Test for Syphilis. Detweiler, H. K. Jour. Amer. Med. Assoc., in the press.



fell woefully behind the Wassermann test in point of reliability, and one by one have fallen into disuse.

In reviewing the various precipitation tests, mention should be made of Noguchi's well-known Butyric Acid Test for excess globulin in the cerebro-spinal fluid. This test is quite delicate but lacks the specificity necessary to displace or rival the Wassermann test.

In 1916 McDonagh<sup>2</sup>, published what he called his "gel" test for syphilis. It consisted, briefly, in mixing the serum with solutions of acetic anhydride, and glacial acetic acid, shaking, and adding a drop of saturated aqueous ammonium sulphate solution. Crystals form in all tubes but it was claimed that they disappear in all but those containing serum from syphilitic patients. This test proved so difficult of interpretation that it has never come into general use.

The first test which really seemed to promise any considerable degree of accuracy, was that proposed by Meinicke<sup>3</sup> in 1917, and particularly his third modification published in 1919<sup>4</sup>. His method consists in placing 0.2 c.c. of inactivated serum and 0.8 c.c. of diluted antigen in a test-tube, shaking, and incubating at 37 degrees C. over night. The antigen is prepared from horse heart, which is first chopped fine and extracted with ether, followed by extraction with alcohol. The alcoholic extract is used as stock antigen and is diluted with 2.5 per cent. salt solution on the day of the test. Meinicke states that his test disagrees with the Wassermann reaction in only 5-10 per cent. of cases. He also states that the flocculation is coarse and can be seen with the naked eye.

A method which possibly attracted still more attention was brought forward in 1918 by Sachs and Georgi<sup>5</sup>. They use a 6.6 per cent. alcoholic extract of beef heart containing 0.05 per cent. cholesterolin as their antigen. This stock preparation is diluted in saline to five times its volume on the day of the test. One cubic centimeter of inactivated serum is mixed with 0.5 c.c. of the diluted antigen, and placed for 18 to 20 hours at 37 degrees C. A fine precipitate forms in the tubes containing syphilitic serum. These authors claimed that their test agreed with the Wassermann results in 94.9 per cent. of 2770 tests. Nathan and Weichbrodt<sup>6</sup> reported 93 per cent. agreements in 1280 tests. A serious criticism of this method seems to be that the precipitate is so fine that great care

<sup>2</sup>McDonagh, J. E. R. *Brit. Jour. Dermat.* 1916. April-June, 114.

<sup>3</sup>Meinicke, E. *Ber. klin. Wehnschr.* 54; 613, 1917.

<sup>4</sup>Meinicke, E. *Munchen. med. Wehnschr.* 33; 932. 1919.

<sup>5</sup>Sachs, H. and Georgi. W. *Med. klin.* 1918. Bd. XIV, 805.

<sup>6</sup>Nathan and Weichbrodt. *Munchenmed. Wehnschr.* Bd. 65; 1280.

must be exercised in interpretation and turbid sera are quite unsuitable for the test. Nevertheless, in the hands of experts it has yielded very good results.

With characteristic thoroughness and minuteness of detail, Dreyer<sup>7</sup> proceeded to improve upon the Sachs-Georgi technique. His "sigma" test, published in 1921, employs as antigen an acetone insoluble, alcohol soluble extract of calf's heart containing 0.05 per cent. cholesterolin. He describes a complicated apparatus to deliver so many drops at a certain height into tubes of a certain size, and to obtain a quantitative result he employs 9 tubes for each serum. As for results, he claims 94 per cent. agreement with the Wassermann test in 1077 cases. Of these, approximately one-third were syphilitics. The only advantage, therefore, that can be urged for this method is the quantitative result. The great disadvantage is that it is at least as complicated as the Wassermann test, without its reliability.

In February, 1922, Wang<sup>8</sup>, described a technique for a precipitation test for syphilis, in which the antigen is a concentrated alcoholic extract of human heart, slowly diluted with saline on the day of the test. The results must be read in 16-20 hours or they are not reliable. The precipitate is fine and granular, making the test difficult to read. Wang claims agreement with the Wassermann test in 96 per cent. of a total of 200 tests, approximately one-third of which were positive in the Wassermann reaction.

Finally, Kahn<sup>9</sup> in 1922 suggested a method of performing the precipitation test which appears to have advantages over all the other methods here reviewed. Keim and Wile<sup>10</sup> report excellent results with this test. The antigen is prepared from fresh beef heart, which is chopped fine, dried by fanning, and ground to a powder. It is then extracted for 24 hours with 10 c.c. of ether for each gram of powder. The ether is poured off and the process repeated three times, when the supernatant ether is quite clear. The ground muscle is then filtered and thoroughly dried.

The powder is next extracted in absolute alcohol (1 gram to 5 c.c.) for nine days in the ice-box and one day at room temperature. It is then filtered and to the filtrate 0.4 per cent. cholesterolin is added.\* This is the finished stock antigen. On the day of the

<sup>7</sup>Dreyer, G. and Ward, H. K. *Lancet*, 1921, I, 956.

<sup>8</sup>Wang, C. Y. *Lancet*, 1922, I, 274.

<sup>9</sup>Kahn, R. L. *Arch. Dermat. & Syph.* 1922, 5, 570, *ibid* 1922, 5, 734.

<sup>10</sup>Keim, H. L. & Wile, U. J. *J. A. M. A.* 1922, Sept. 9, p. 870.

\*Kahn uses the non-cholesterinized filtrate as a second antigen in his tests but we have not found this to be of any material advantage and does not seem worth the extra labour.

test it is diluted with three times its volume of physiologic saline solution.

The actual test is extremely simple. The serum is inactivated at 50 degrees C. in the water bath for 30 minutes as for the Wassermann test. To 0.3 c.c. of serum in a three-eighths inch test tube is added 0.05 c.c. of the diluted antigen. The tube is shaken vigorously for three minutes and placed in the incubator at 37 degrees C. over night (Too narrow a test tube renders shaking difficult.) It should not be agitated before reading the result in the morning.

A strongly positive reaction is evidenced by the presence of one or more large clumps of precipitate which may be floating at the top, or throughout the liquid, or may be lying at the bottom. In the latter case, very slight agitation will at once reveal its presence. We have found it convenient to designate the result as four plus when all the precipitate is gathered into one large clump,—three plus when in several large clumps,—two plus when the precipitate is easily seen as a fairly coarse flocculation, and one plus when in the form of a fine granular suspension visible to the naked eye, but best viewed by the aid of a watchmaker's lens. A negative serum appears quite free of precipitation.

#### RESULTS.

We have now used this test in parallel with the Wassermann reaction\* in over two thousand consecutive sera submitted from the general profession of the Province of Ontario. At the time of writing, the first 2126 of these tests have been subjected to careful analysis with the results here recorded:—

#### ANALYSIS OF 2126 PARALLEL TESTS.

	Proved cases of syphilis	Not proved cases of syphilis	Non- ** syphilitics
Wass. test, positive .....	480	15	—
Wass. test, negative .....	25	—	1606
	(treated or early cases)		
Kahn test, positive .....	460	6	22
			(one plus)
Kahn test, negative .....	45	—	1593
	(treated or early cases)		

\*The technique of the Wassermann test as performed in our laboratory has been described in the literature on different occasions and need not be detailed here. The antigen employed is a cholesterinized alcoholic extract of human heart. The serum amounts are 0.2, 0.1, and 0.05 c.c.

\*\*Including thoroughly treated cases yielding both negative Wassermann

In the 2126 parallel tests there was agreement between the two procedures in 2015 sera or 94.8 per cent. Of the 111 discrepancies, 60 were instances of a positive Wassermann test with a negative Kahn. Of these all but 13 were in proved cases of syphilis, mostly treated. The remaining 51 discrepancies were instances of a positive Kahn test with a negative Wassermann. Of these, 26, almost exactly one-half, were in proved cases of syphilis.

It will be noted that the percentage of agreements in this series (94.8) is remarkably close to the figures given in the series reported by Dreyer and Ward, Wang, Sachs Georgi, Nathan and Weichbrodt, and by Detweiler (1). The actual percentage, however, is of little importance, unless the proportion of syphilitic cases in the series is stated. The reason for this is dealt with elsewhere (1) and need not be repeated at this time.

Out of the 17 instances in 2126 tests, where the Wassermann reaction was very strongly positive and the Kahn test negative:—

- 6 were treated cases of syphilis,
- 4 were early primary cases,
- 7 had no history of syphilis.

Out of 43 instances in 2126 tests where the Wassermann reaction was less strongly positive, and the Kahn test negative:—

- 34 were treated cases,
- 1 was an early primary case,
- 8 had no history of syphilis.

Out of 5 instances in 2126 tests where the Kahn test was four plus or three plus and the Wassermann reaction negative:—

- 2 were treated cases,
- 3 had no history of syphilis.

Out of 46 instances in 2126 tests where the Kahn test was two plus, or one plus, with a negative Wassermann reaction:—

- 21 were treated cases,
- 2 were early primary cases,
- 2 had a positive history,
- 2 had wives with positive bloods,
- 19 had no history of syphilis.

In nearly all of this last group of cases the reaction was only one plus and could not lead to error if the same precaution in interpretation is taken as in the case of slight complement fixation.

## DISCUSSION.

In our previous publication on this subject one felt justified in drawing certain conclusions with regard to the reliability of the Kahn test. This new series of consecutive cases in the regular routine of a public health laboratory serves to confirm the opinions expressed in that article. In the first series the agreements between the two tests amounted to 94.2 per cent. in 1540 tests, of which about one-third were in cases of syphilis. In the work here reported, the agreements, comprise 94.8 per cent. of 2126 tests, of which about one-quarter were in cases of syphilis.

While the Kahn test is remarkably efficient, it cannot yet be said to equal the reliability of the Wassermann test, at least in our hands. It cannot be used to test cerebro-spinal fluids; it misses more cases of treated syphilis than does the Wassermann, and while it has detected the early case before the latter, the converse is more often true.

Most of the 5.2 per cent. disagreements were instances of negative Kahn tests with weak Wassermann fixation, and negative fixation test with a one plus Kahn.

It must be remembered that in the cases marked "no history of syphilis", one is depending upon the accuracy of the history sheets accompanying the specimens. While the great majority of the general profession are conscientious about filling in the data, the specimens without information are labelled for the purposes of this investigation "no history of syphilis". Nevertheless, the Wassermann reaction was positive and the Kahn test negative in 15 cases with "no history of syphilis", whereas the converse was true in 22 cases with the same history.

The ease with which this test is done makes it practicable for use in laboratories and offices in which facilities for performing the Wassermann test are lacking. In a large public health laboratory it has already proved itself of great value in furnishing an additional check upon the results of the Wassermann test and in confirming positive or negative results where the history available may seem conflicting.

I wish to acknowledge my indebtedness to Miss Gladys Matthews for technical assistance which made this study possible.

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# Canadian National Committee for Mental Hygiene

## Mental Hygiene for Normal Children

ACCOUNT OF EXPERIMENT CONDUCTED BY THE CANADIAN NATIONAL COMMITTEE FOR MENTAL HYGIENE AND THE TORONTO KIWANIS CLUB.

### *Foreword.*

Two years ago, through the kindness of our Associate Treasurer, Mr. George H. Ross, and our Auditor, Mr. Fred Page Higgins, the Canadian National Committee for Mental Hygiene was given the opportunity of seeking substantial support from the Toronto Kiwanis Club. The latter body contributed over \$5,000.00 and was prepared to furnish further assistance. In the following account are presented some interesting details concerning work that has been conducted by the two organizations.

The National Committee assumed the obligation, for a six months' period, of co-operating in the supervision of 100 fatherless boys. The work included the making of a careful study of each lad—an inquiry into his temperamental make-up, his aptitudes, his weaknesses, his strengths, etc. It was arranged that this information would be incorporated in a report to the Toronto Kiwanis Club, together with recommendations concerning the type of supervision needed. On its part, the Kiwanis Club was prepared to furnish volunteers from among its 250 members who would assume the task of supervising the boys as if they were their own sons.

The six months period has not yet elapsed, but sufficient progress has been made to warrant the statement that the experiment has been an unqualified success. Indeed, the demonstration shows that Mental Hygiene has a wide field of usefulness in its application to normal children. Heretofore, the energies of the National Committee have been devoted, largely, to the solution of the problem of mental abnormality, and rightly so, but, as time goes on, so-called normal individuals should receive more mental hygiene attention.

One of the members of the Toronto Kiwanis Club, Mr. Richard T. Stanley, is writing storiettes about the 87 boys who are, at present, receiving assistance. These accounts are appearing in the weekly bulletin of the Club and are written for the purpose of winning wider support for Child Welfare activities. They are full of human interest, and the following extracts are well worth reading:—



## (1)—RAYMOND RIPLEY,

A CITIZEN OF 1930.

Raymond is fourteen—a dog-gone real Canadian boy. Full of pep—and just at the age when he talks and dreams of what he wants to be and do.

His natural bent is wood carving, and he is planning to be a cabinet maker. In school, they just can't keep him out of first or second place.

Raymond and Gordon Thompson (Kiwanian) are Pals—they think the world of each other. Gordon says Raymond is as "keen as a razor," and is backing him against all the other Pals to win several of the Pals' efficiency prizes this Fall. Raymond already has the Kiwanis spirit—he denied himself the pleasure of the last Pals' picnic so he could earn some money to send his sister to a picnic the next day. Wouldn't you like to have a real boy like this to pal with you?

This is just one of the eighty-seven boys who have Kiwanis Pals—all ages from nine to seventeen. Boys in the making of future citizens—influenced and guided by the love and friendship of real Kiwanians.

We are going to tell you some more stories—with photographs, from week to week—of such good Kiwanians as George Batchin, Bill Black, Bob Fitzpatrick, Jim Tweddell, Walter Thompson and sixty others.

## (2)—SO TERRANCE TELEPHONED BILL.

When Terrance's mother decided to take out their telephone to cut down expenses, Terrance firmly said "No." He would earn the money and pay for it himself so he could talk to Bill (Kiwanian) any time he wanted to.

Bill is Dr. Will Black, and Terrance is Terrance Wright, his fifteen-year-old Kiwanis Pal. Wouldn't it squeeze your heart a little to have a boy feel that way about you?

Terrance was seeking an outlet for his dreams and ambitions when Bill appeared on the scene. He found Terrance through with his schooling—anxious to help his mother with the home—and on his toes all set to go.

To-day, Terrance is a regular business man—with a bicycle and a newspaper route which Bill staked him to. Out of his earnings, he pays mother the ten dollars a month she was short—a dollar a week to Bill, and the telephone so he can talk to his "Partner."

Terrance is of a mechanical turn of mind and wants to be a draughtsman. Bill and he have talked it over and it is all planned.

Doesn't it read like the romantic start of some of our famous men of to-day?—and why shouldn't it be the start of a famous man of to-

morrow?—guarded and influenced by the loving friendship of a Kiwanian.

This is just another little story of the eighty-seven boys who have Kiwanis Pals—and getting their chance.

### (3)—BOB AND THE BUDD BOYS.

Bob Fitzpatrick (Kiwanian) has four of the finest honest-to-goodness boys you ever met, one would think they were sufficient for any man's love and interest—but when Bob saw the three Budd boys, he found his heart big enough to want to be their Kiwanis Pal.

Melville is fourteen, Frank twelve, and Norman ten—all interesting ages. Bob has had a wonderful time this summer with the septette. The Fitz boys and the Buddies have had some real parties together—and Bob takes the gang swimming one night each week. He is frequently asked if they are all his family, or is it a picnic.

Melville and Frank are the huskiest of the trio, but young Norman gives signs of being the real athlete of the Budd family. Melville is a student and is ambitious for a religious career—maybe a famous preacher is getting his start from Kiwanis Palship. Bob sent the Buddies up to Island Camp for ten days—they had the time of their lives—and Bob is the happiest of the lot over it all.

Eighty-seven boys—carefully selected and thoroughly investigated—are receiving the loving care of Kiwanians who are repaid with the joy of real service in guiding these Canadian boys into Canadian citizenship.

### (4)—HUGH, DAVID, AND BILL.

#### BUSINESS OF LIFE—UNLIMITED.

David Alexander became a man overnight—one day a carefree boy of fifteen—the next found him the head of a family of seven.

There was inherent in him some of his soldier-father's bravery and strength of character—and he stood up to his responsibility. Bill, his thirteen-year-old brother and inseparable chum, stood with him. They talked it over calmly in their boyish wisdom—and standing shoulder to shoulder, they looked out into the world and said: "Let's go!"

At this moment of their need of a guiding hand—the unfailing law of adjustment brought a Kiwanis Pal into their lives—and it could not have selected a better man or Kiwanian than Hugh Garrett.

Hugh and David and Bill had several conferences. David is a born executive and has thought out exactly what he wants to be—an executive in a manufacturing organization. He had already grounded himself with two years at the School of Commerce—his brother Bill is of the same mind and right on David's heels.

The boys wouldn't take any kind of a job, as they wanted to get started right—so, armed with a letter of introduction from Hugh, David stormed the office of one of Toronto's prominent citizens. He waited all one afternoon and most of the next morning to see him—once he got in, he sold himself—landed a position, and is making good.

Hugh has taken Bill into his own office—he is so courteous and useful that Hugh hates to have him leave to go back to school. The firm of Alexander Bros.—capital limited—advisory board, Mr. and Mrs. Hugh Garrett—are well on their way in the business of life—Kiwaniis has once again justified its existence—and you should hear Hugh and Mrs. Hugh tell of the joy they have gotten out of it.

Twenty years from now there will still be Kiwanis Clubs—because the spirit of Kiwanis is eternal. Two business executives will be Kiwanians in that day—and you are darn right that the Clubs David and Bill Alexander belong to will have Kiwanis Pals to reach out a loving hand to other Davids and Bills standing on the threshold of life.

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## The Provincial Board of Health of Ontario

### Communicable Diseases Reported for the Province for the Month of September, 1923

#### COMPARATIVE TABLE.

Diseases	1923		1922	
	Cases	Deaths	Cases	Deaths
Smallpox .....	25	0	19	1
Scarlet Fever .....	270	6	180	4
Diphtheria .....	245	17	180	19
Measles .....	95	0	62	0
Whooping Cough .....	230	8	196	8
Typhoid .....	131	25	79	7
Tuberculosis .....	169	74	180	111
Infantile Paralysis .....	6	2	55	9
Cerebro Spinal Meningitis.....	2	1	8	6
Influenza .....	13	7	....	....
Influenzal Pneumonia.....	....	2	....	4
Pneumonia .....	....	93	....	76
Syphilis .....	173	....	138	....
Gonorrhoea .....	222	....	210	....
Chancroid .....	6	....	3	....

## The Facts About Niels Bukh

AND ABOUT HIS VISIT TO AMERICA IN SEPTEMBER AND OCTOBER  
WITH HIS OLYMPIC GAMES TEAM OF 25 ATHLETES.

Niels Bukh is the founder and head of the great Peoples' College at Ollerup, Denmark, on the beautiful island of Fyen, near Copenhagen.

He discovered and developed a revolutionary system of physical education in 1913, which has changed the entire course of European methods in this field. He has built up the great school at Ollerup which is attended by students from all parts of the world who are sent by their countries to learn his method. He has to date trained 1,000 young men and women and sent them out to carry on this work.

Bukh calls his method "Primitive and Rhythmic Gymnastics." The first division is the one which has been most revolutionary. He believes that many of the muscles and functions of primitive man have become atrophied because of our modern manner of life, and that the prevailing weaknesses of the race can be traced to their neglect. His Primitive Gymnastics are designed to call into use again all of these neglected elements of the body. They are performed by his students with a minimum of clothing and have created a furore wherever seen because of their strange character. These exercises are ugly, and call for unparalleled contortions and strenuousness. They go back to man's natural movements of hundreds of thousands of years ago. Results are quick and permanent. Says the Politiken of Copenhagen: "He is able to transform the stooping crook-backed recruit to a statuesque, beautiful youth in so short a time that one is tempted to believe in miracles."

Having thus produced a supple, co-ordinated body, his next division, Rhythmic Gymnastics, takes up and completes the physical development which has caused Europe to marvel, and all in the short period of three months, which is the usual term at his adult college. These latter exercises are very beautiful and the students enter into them with an eagerness and a joy which demonstrates Bukh's second great achievement. He has rediscovered the secret of the Greeks; how to create spontaneity and the play spirit, which has been totally lacking from the modern systems of physical education.

The importance of this discovery lay in the fact that in 1913 Europe had lost its faith in the prevailing physical education. The systems of Ling of Sweden and of the Germans were formal, spiritless and uninspiring. There was a feeling that gymnastics were not so fundamental and

healthful as had been believed, and that they were only of value in corrective work. It was seen that this type of development had been largely superimposed by those interested in strengthening the national armies. It was charged that the known methods were surface activities, that they did not go deep into the mind and spirit, nor link up with self expression of fundamental instincts.

It is all these things that Bukh has changed. He planned his work so that it would spring out of the delight of young people in discovering a rhythmic method by which they could express their love of beauty which is so dear to the life of youth. He has made physical education a delightful game of self expression.

Bukh comes to the United States just at a time when all those interested in recreation, physical education, athletics, and kindred subjects are centering their efforts on universal participation, as contrasted to the growing national custom of sitting and watching picked teams perform, the disease which has been dubbed "spectatoritis." His methods and his system will be of the greatest value in backing up this movement for a healthier nation. Familiarity with his plan will also bring to the physical educators of America the same stimulus and new vision which revolutionized the European efforts in this field.

Bukh and his pupils arrived in the United States about the middle of September and are touring the country as far West as Omaha.

Bukh has headed every team of athletes which has represented Denmark since 1912. His teams have been the sensations of Olympic Games. He has been invited to demonstrate his work in every great country in Europe. He has trained the officers of the Danish Army. The Belgian Army has sent a commission to study his methods, and a Royal Commission from the Netherlands did the same. The chief educators of Germany brought him to their conference in Hamburg. He has been asked by the leading educators of England to conduct a course for physical educators there. From one end of Europe to the other, he is the one outstanding figure in the physical education field.

A committee of representatives of the Playground and Recreation Association of America, Community Service, the Russell Sage Foundation, the American Scandinavian Foundation, the Country Life Association of America, and Teachers' College of Columbia University have been responsible for bringing Bukh and his athletes to America. Their purpose is not commercial, but educational.

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## Book Review

*"The Mortality Experience of Industrial Policyholders" (1916-1920).*

This useful volume is the result of a suggestion made by Dr. Frederick L. Hoffman, formerly Third Vice-President and Statistician for the Prudential Insurance Company of America. It consists of a combined study of industrial mortality statistics. The primary classification guide used has been the Manual of the International List of Causes of Death (1909 revision), the rules of the United States Bureau of the Census for the treatment of jointly returned causes of death, supplemented by the Index of Joint Causes of Death issued by that office. The report has involved an enormous amount of work and co-operation upon the part of a number of life insurance companies. It should prove a valuable contribution to the statistical information which we possess as to causes of death and in addition to being of value to life insurance companies, it might well be utilized by public health authorities for definite information upon which to base preventive action.

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## Notes on Current Literature

FROM THE HEALTH INFORMATION SERVICE, CANADIAN RED CROSS SOCIETY.

### *Health Habits.*

The instruction of school children in health habits and ideals. An address by Miss S. L. Jean, of the American Child Health Association before the National Conference of Social Work, Washington, D.C. "Mother and Child," July, 1923, page 291.

### *Maternal and Child Hygiene.*

New York State's plan for maternity, infancy and child hygiene, as outlined by Florence McKay, M.D., Director, Bureau of Child Hygiene, New York State Department of Health. "Public Health," Michigan, July, 1923, page 267.

### *Child Hygiene in New York City.*

The Bulletin of the New York City Department of Health for June, 1923, reviews the work of the Bureau of Child Hygiene during 1922.

### *School Medical Inspection.*

The technique and results of school medical inspection. "Mother and Child," July, 1923, page 315.

### *Health for School Children.*

A report of the Advisory Committee on Health Education of the National Child Health Council.

### *Health of School Children.*

An address by the Director of Public Health, University of Michigan, before the American Medical Association, on constructive health activities in the public schools. "The Journal of the American Medical Association," August 4th, page 378.

### *Mouth Hygiene for School Children.*

By Alfred C. Fones, D.D.S., Director, Division of Dental Hygiene, Board of Education, Bridgeport, Conn. "Mother and Child," August, 1923, page 339.

### *Social Hygiene.*

The American Social Hygiene Association has recently issued two pamphlets on community education in social hygiene. One pamphlet deals with principles and the other with methods of organization.

*Malnutrition.*

A paper read by Beatrice Woodward, R.N., before the Nurses' Annual Convention at Santa Barbara, 1923, on the causes, effects, and some of the remedies of malnutrition. "The Pacific Coast Journal of Nursing," August, 1923, page 488.

*Expenditures of Health Departments.*

Section II. from the forthcoming report of the Committee on Municipal Health Department Practice, of the American Public Health Association. "American Journal of Public Health," June, 1923.

*The Work of the Ministry of Health.*

A review of the work of the Ministry, by Mr. Melville Chamberlain, British Minister of Health. "The Medical Officer," July 7th, 1923, p. 5.

*Canadian Red Cross Society Report.*

Annual Report of the Executive Committee and Review of Activities of Provincial Divisions for the year 1922.

*American Red Cross Pamphlets.*

The American Red Cross have recently issued revisions of the following pamphlets, copies of which may be obtained upon application to the Canadian Red Cross Society:—

"Information for Nurses Concerning the Red Cross Public Health Nursing Service."

"Nursing Equipment for American Red Cross Public Health Nurses."

"First Aid Instruction."

*Red Cross Manual for Home Nursing Classes.*

A Manual for Home Nursing Classes has recently been issued by the Canadian Red Cross Society. Copies may be obtained from the Executive Officers of Provincial Divisions. Price 25 cents.

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## News Notes

On October 9th, Mrs. Pankhurst, Mrs. R. A. Kennedy of Ottawa, and Miss Estelle Hewson, Ontario Secretary for the Canadian Social Hygiene Council, start on a propaganda tour through Eastern Ontario. Local Medical Officers of Health, Women's Institutes and Medical Societies have been asked to co-operate, and it is anticipated that this tour will be quite as successful as the one recently undertaken by the same speakers in Northern Ontario.

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The Recreation Congress meets this year in Springfield, Illinois, the sessions being held in the State Capitol. Important among the topics to be discussed are athletics for girls and women, the national physical fitness campaign, adult recreation, the Church and recreation, home play, small town and open country recreation, recreation for coloured people and summer camps. Other interesting topics of discussion are the automobile's place in recreation and the value of parks and playgrounds in real estate development.

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Dr. C. J. O. Hastings, Medical Officer of Health of Toronto, was recently awarded the Degree of Doctor of Science at a special convocation of the University of Syracuse.

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The Hon. Dr. Forbes Godfrey, Minister of Health and Labour, Ontario, spoke on the subject of "Accidents in Industry" at the recent Convention of the Safety Congress, held in Buffalo.

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Dr. R. R. McClenahan, of the Provincial Board of Health, Ontario, who has been confined to hospital for the past two weeks, is making satisfactory progress towards recovery.

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Dr. J. W. S. McCullough, Chief Officer of Health, Ontario, read a paper entitled "Whole Time Health Officers" at this year's Annual Meeting of the American Public Health Association in Boston.

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## Editorial

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### THE NEW ORDER.

People are no longer satisfied with the microbe and other theories that were generally accepted a generation ago. So at least says a bulletin issued by the Citizens' Medical Reference Bureau (whatever that organization is), recently broadcasted to such an extent that various metropolitan dailies reprinted it. This useful piece of information is followed by more of an equally enlightening character which, being interpreted, leads one to believe that to administer anti-toxin is wicked, to vaccinate is to follow the practice of those who are utterly vile, while to suggest the efficacy of quarantine is to put oneself completely behind the pale. The *raison d'être* of this effusion appears to be a book on Tuberculosis, by Dr. David C. Muthu, a well-known English physician, which may have some merit.

Dr. Muthu discusses the conveyance of disease and points out that the prevalence and spread of epidemics are largely influenced by filth, insanitation and uncleanness, that they rage in poor overcrowded and ill-ventilated districts and slums devoid of fresh air and sunshine, and that when such insanitary areas are cleared, the epidemics lose their virulence and disappear. All of which is quite true and has nothing whatever to do with the mild suggestions of the Medical Reference Bureau.

Dr. Muthu goes on to say that "the medical mind has been trained for a generation to think and act bacteriologically. The luxurious development of bacteriology has side-tracked medical research, narrowed its vision, exaggerated the part played by micro-organisms and distorted the perspective of healthy and diseased conditions."

This statement may also be quite true, but capable, however, of widely different interpretation by scientific and lay minds. A little knowledge is a dangerous thing and the anti-medical fanatic can easily take a statement of this character and twist it quickly into a fantastic resemblance of its former self. That is doubtless the reason the Medical Research Bureau printed it.

The proverbial grain of truth is present in Dr. Muthu's statement, however, and it is worth pondering over. Every far-seeing person interested in public health must wonder whether, in spite of the infinite value bacteriology has rendered us in giving us some vision of public health possibilities, we have not limited ourselves to what we shall find to be primitive conceptions. In the public health of the future, the

psychologist, the economist, and the recreation expert will doubtless play a part quite equal to that of the bacteriologist, the physician and the sanitary engineer. Perhaps the time is not yet ripe, but knowledge breeds wisdom, and from wisdom comes the understanding that finally will avail us much.

Even through the mist rising from the wailings of the anti-vaccinationist and his ilk, one sees a vista of things greater than have been.

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#### ON AGREEING TO DIFFER.

It is reported that a protest against mixed dancing in school premises was forwarded by the Baptist Convention of Ontario and Quebec recently in session to the Management Committee of the Toronto Board of Education. The protest was filed and no action on the part of the Board resulted.

One cannot but wonder at the ridiculous situation which presents itself when a protest of this sort is forwarded by some well-meaning denomination. While one sect is greatly exercised by the terrific immoralities which result from the admiration and practice of the terpsichorean art among young people, another rolls up its sleeves, waxes the parish hall floor, organizes a first-class orchestra and invites all and sundry of the neighbourhood to trip the light fantastic.

Sect number one sees the devil hiding behind the piano. Sect number two by the same token sees him ignominiously fleeing out of the door, pursued by the strains of the Blue Danube.

It all depends upon how you look at it. If your father and your father's father lived on Chestnut Street and went to the Chapel, well, then, perforce you petition the School Board to stop this disgraceful and immoral and degrading dancing immediately. If, however, your immediate ancestors for a few generations back lived on Walnut Street and went to the church, you shout: "On with the dance, let joy be unconfined!"

Which is right? Ah! that is another question, which neither of us has had time to investigate. Some day we'll get together on the matter. Then we'll see that our young people get a fair show. In the meantime we'll just agree to differ.

All of which sounds almost like an argument for church union.

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